



2017 Drought in the Northern Great Plains

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SD State Climatologist

Coming Soon!

2017 Northern Plains Drought Assessment,
publication in summer 2018

- In partnership with NIDIS Missouri Basin Drought Early Warning System
- Montana, North Dakota, South Dakota, Canada
- Agriculture, water supply, wildland fire, tribal impacts
- History and evolution of 2017 drought
- State responses
- Key messages/lessons learned/recommendations
- Collaborate with NOAA ESRL on attribution study

NIDIS Missouri River Basin DEWS

<https://www.drought.gov/drought/dews/missouri-river-basin>

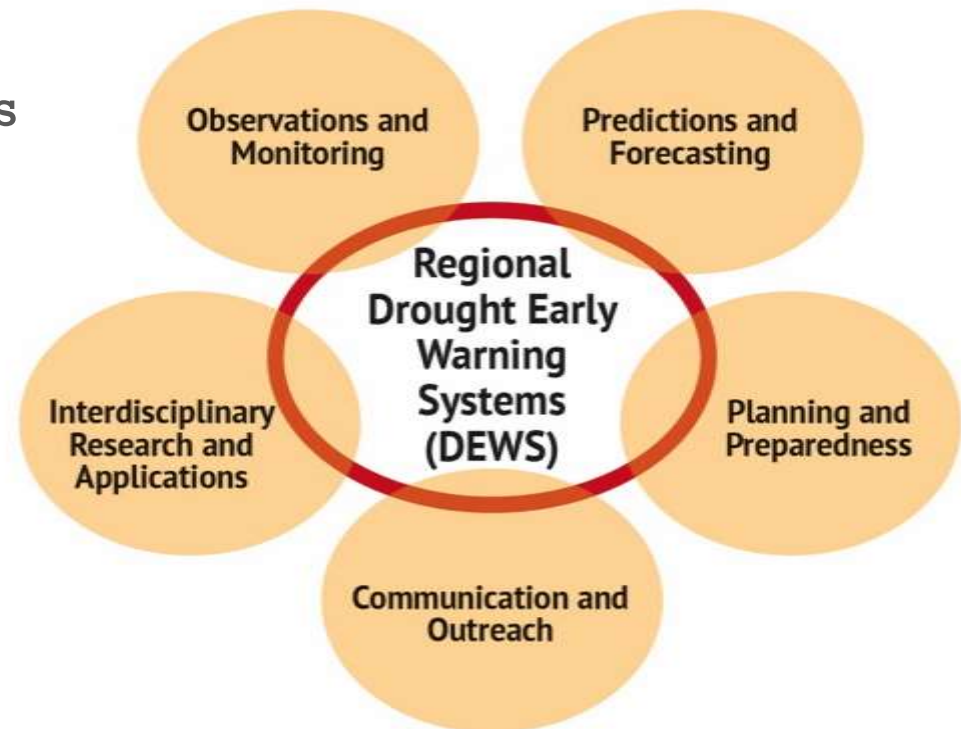


What is a Drought Early Warning System?

“A comprehensive system that collects and integrates information on the key indicators of drought in order to make usable, reliable, and timely drought forecasts and assessments of drought.....

...and communicates drought forecasts, conditions, and impacts on an ongoing basis to decision makers, the private sector, and the public.”

- NIDIS Public Law 109-430



Failed Wheat Crop in the Dakotas



Winter wheat in ND



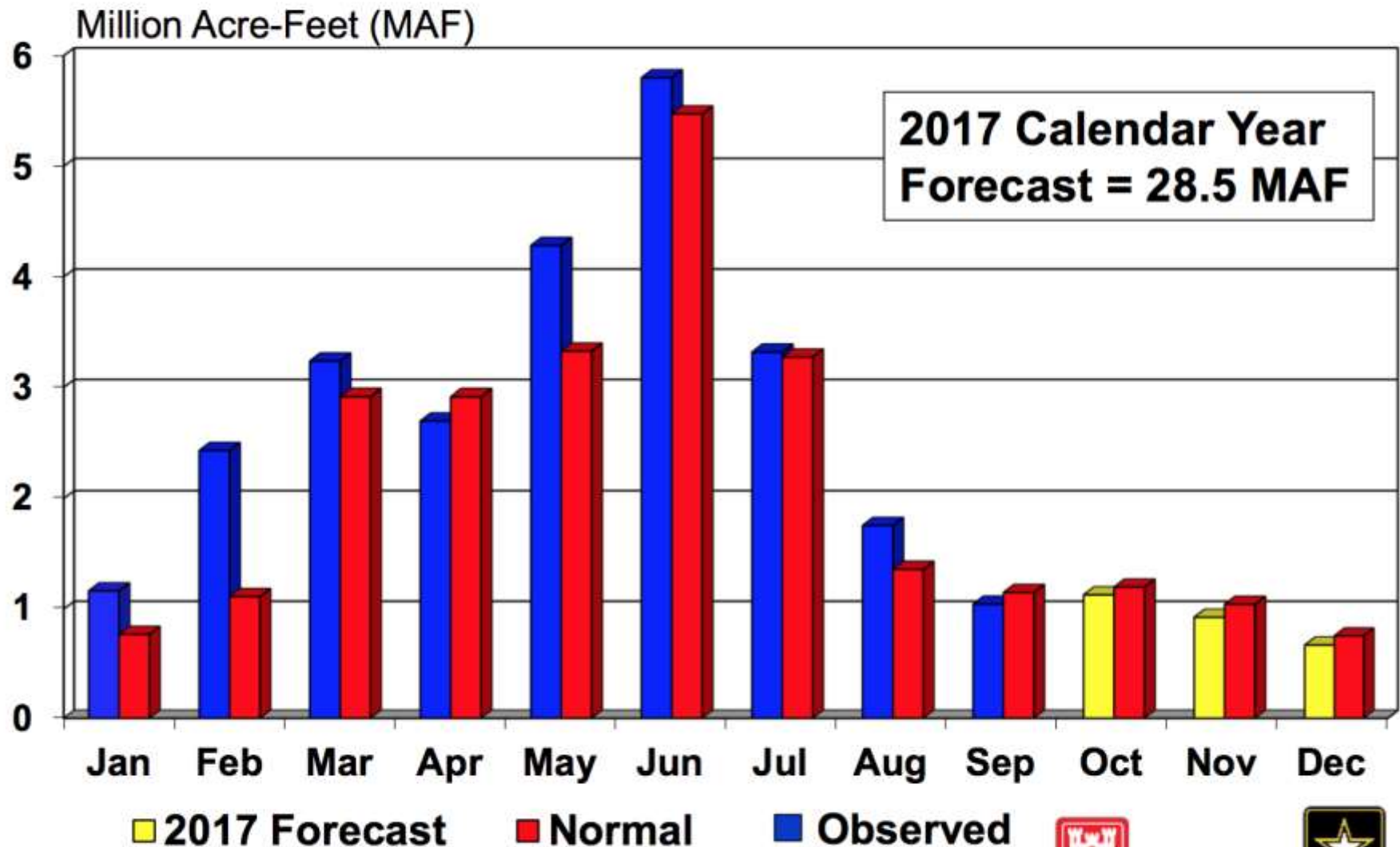
Spring wheat in SD

Other reported impacts

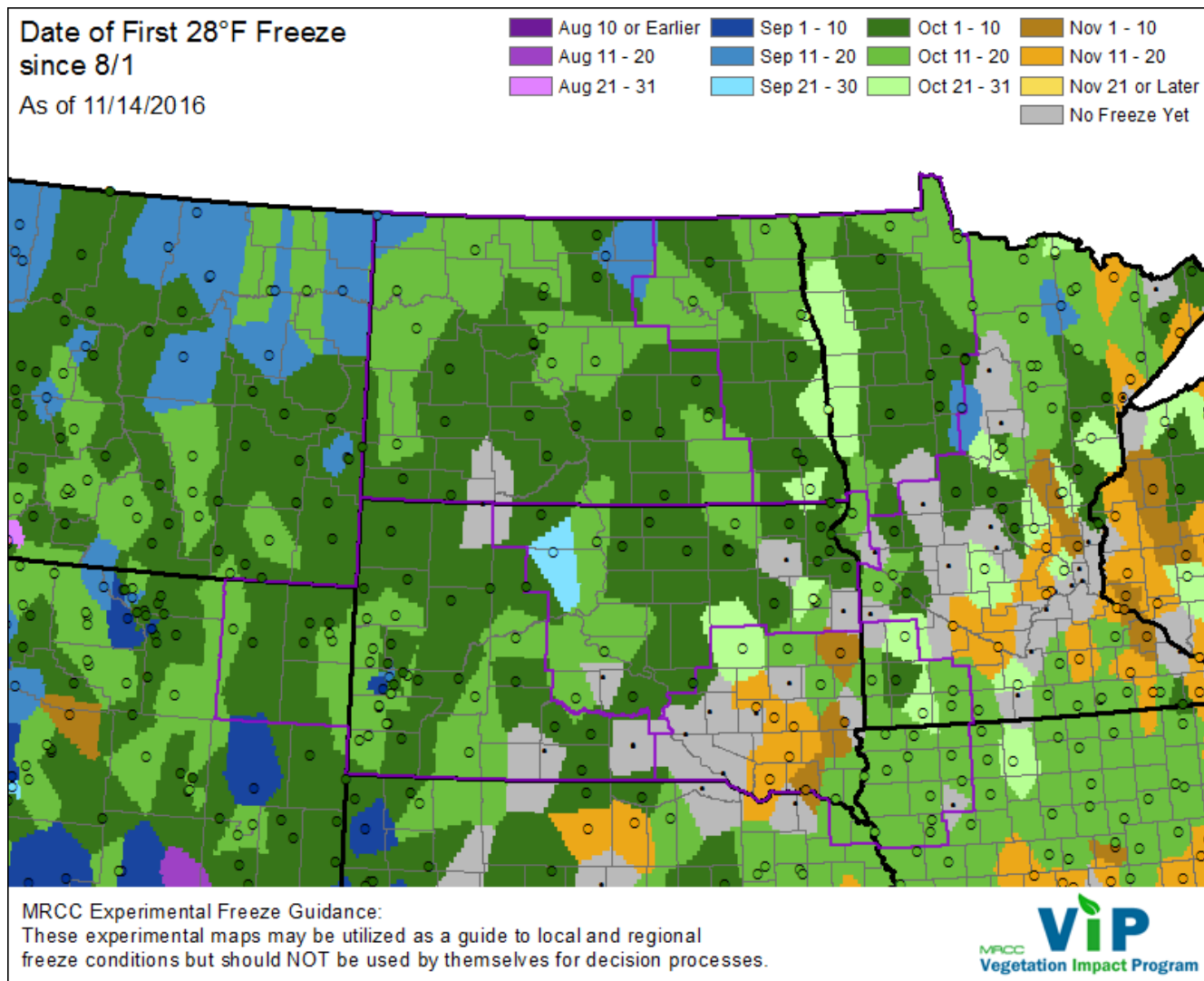
Primarily in ag sector

- Burn bans in many counties, fireworks bans?
- Cattle sales: cow/calf pairs
- Livestock illnesses (dust pneumonia) from feeding in lots
- Reduced growth in pasture, hay and forages
- Uneven emergence and thin stands in corn, soybeans
- Poor livestock water quality in stock ponds
- County drought declarations
- Water restrictions for rural water systems due to system infrastructure limitations
- Wildlife (pheasant, deer) species affected by drought conditions

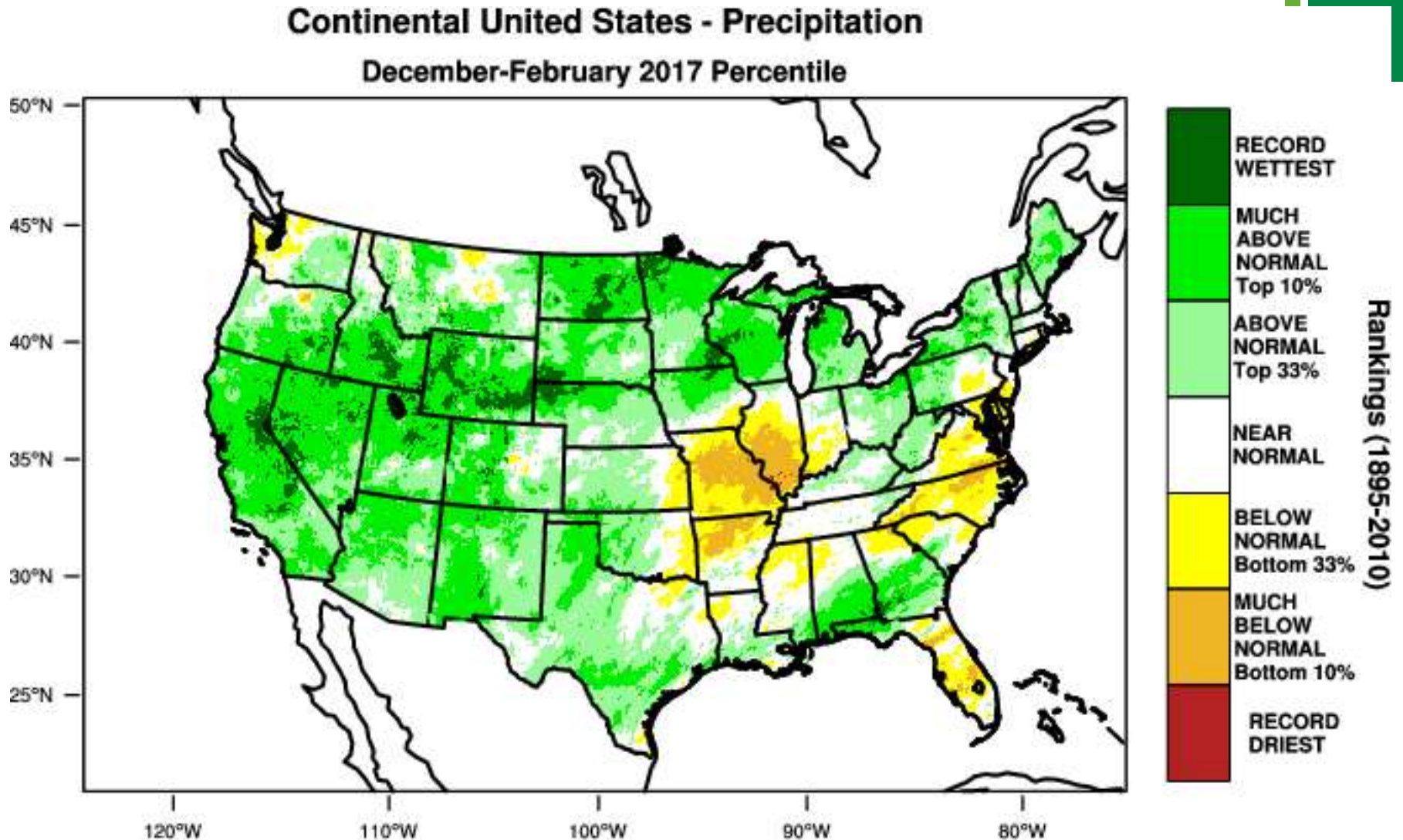
Monthly Runoff above Sioux City, IA



Fall Freeze 2016



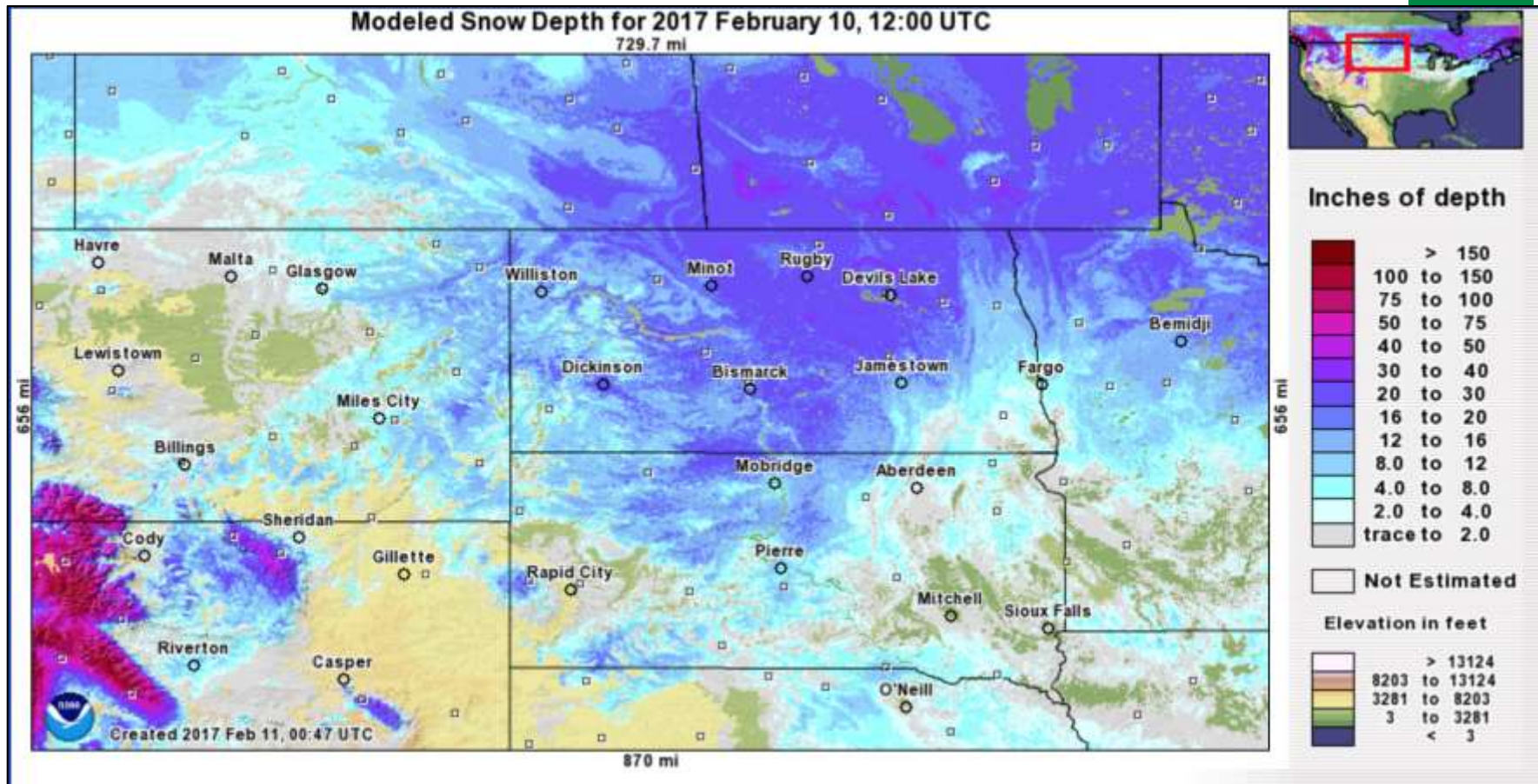
Very wet winter (DJF 2016-17)



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Final), created 16 SEP 2017

Winter snowpack

Peak in early February



<https://www.nohrsc.noaa.gov/interactive/html/map.html>

BNSF railroad clearing

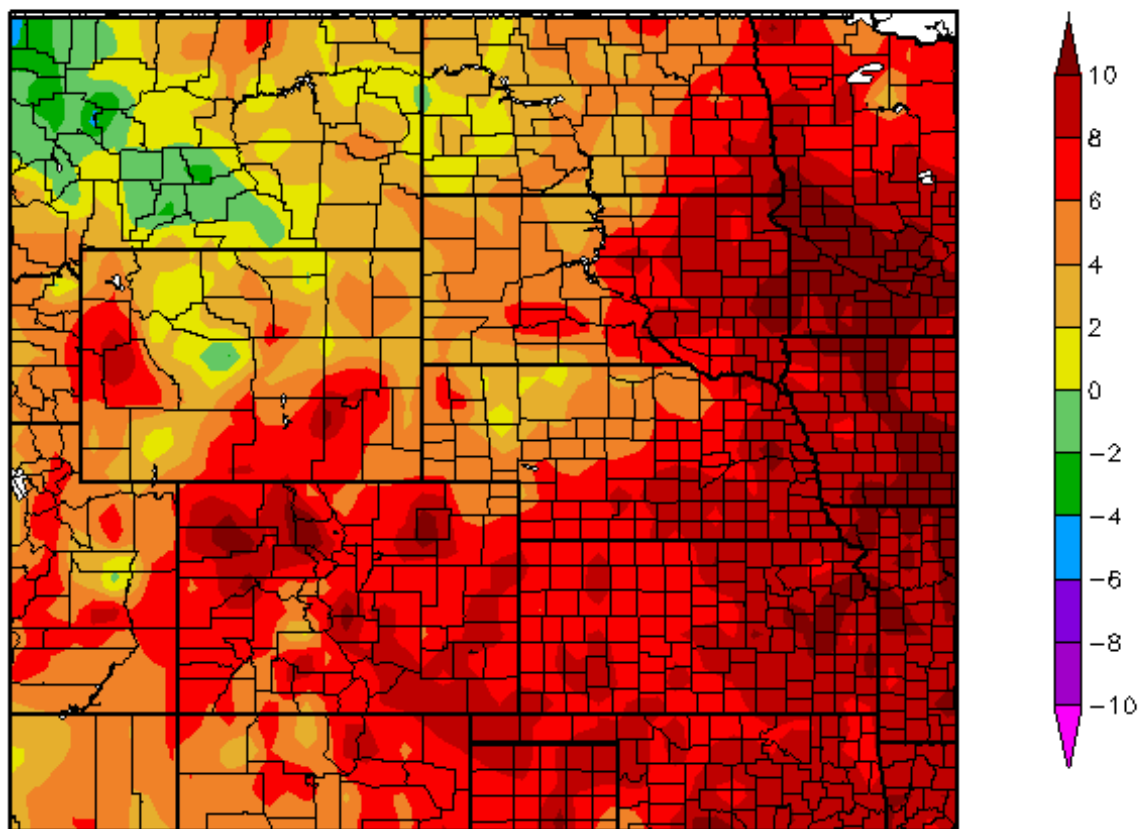
<https://twitter.com/BNSFRailway/status/818484691867090945> (posted 1/9/17)



Warm February

No residual snowpack

Departure from Normal Temperature (F)
2/1/2017 – 2/28/2017

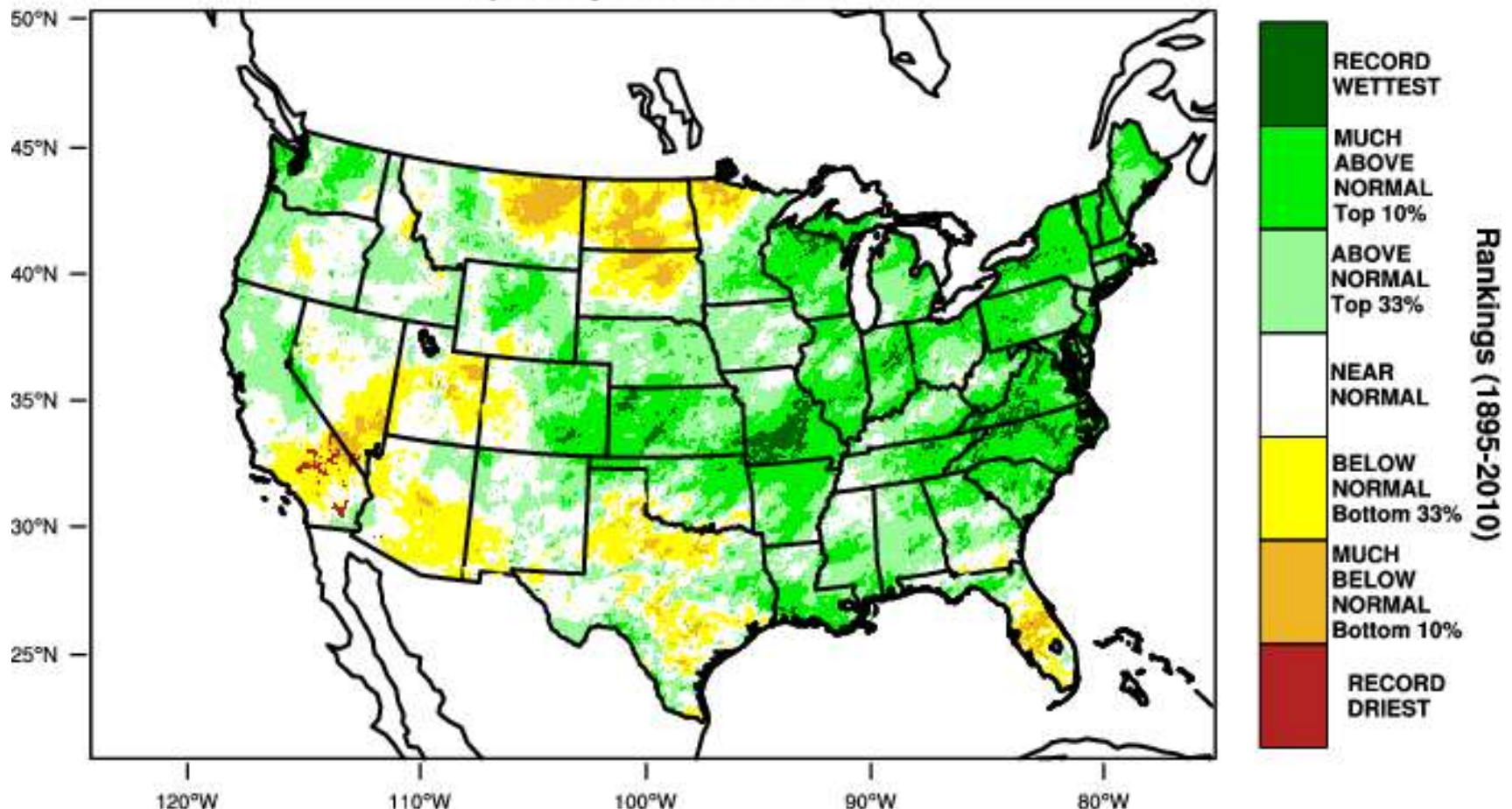


Dry spring 2017

Critical months for pasture, forage and small grains

Continental United States - Precipitation

April-May 2017 Percentile



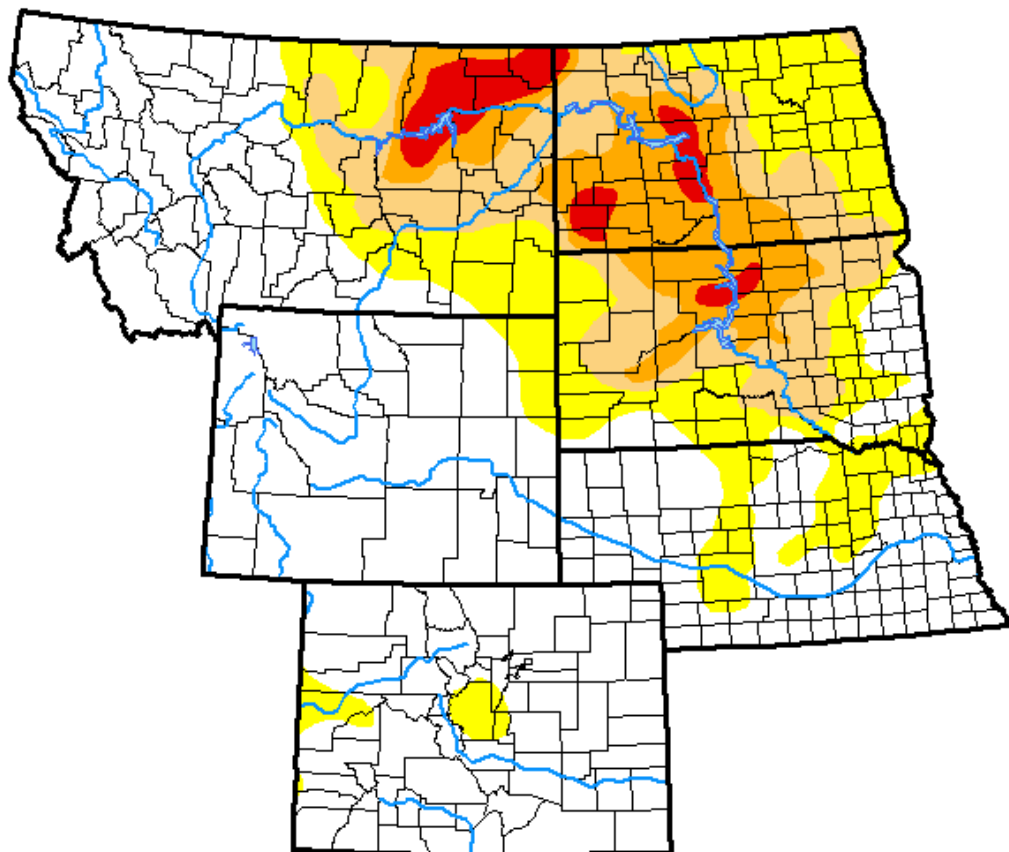
U.S. Drought Monitor

USDA Northern Plains Climate Hub

June 20, 2017

(Released Thursday, Jun. 22, 2017)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	60.24	39.76	22.13	10.80	2.86	0.00
Last Week 06-13-2017	65.98	34.02	21.59	7.66	0.00	0.00
3 Months Ago 03-21-2017	74.31	25.69	13.05	0.93	0.04	0.00
Start of Calendar Year 01-03-2017	61.47	38.53	15.95	1.47	0.00	0.00
Start of Water Year 09-27-2016	62.66	37.34	14.21	3.88	0.23	0.00
One Year Ago 06-21-2016	77.30	22.70	6.65	0.92	0.00	0.00

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

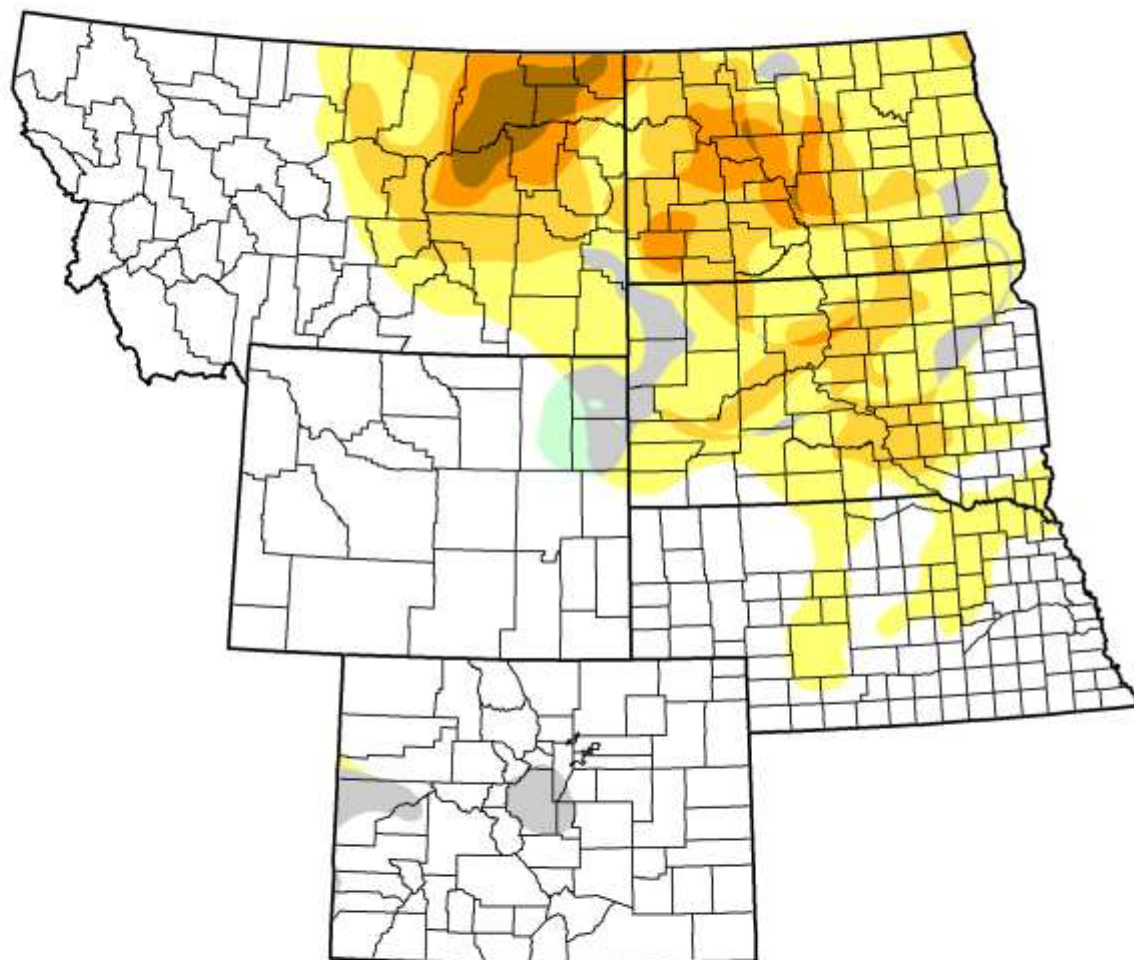
David Miskus
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor Class Change - USDA Northern Plains Climate Hub

1 Month



June 20, 2017
compared to
May 23, 2017



- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

Drought in SD

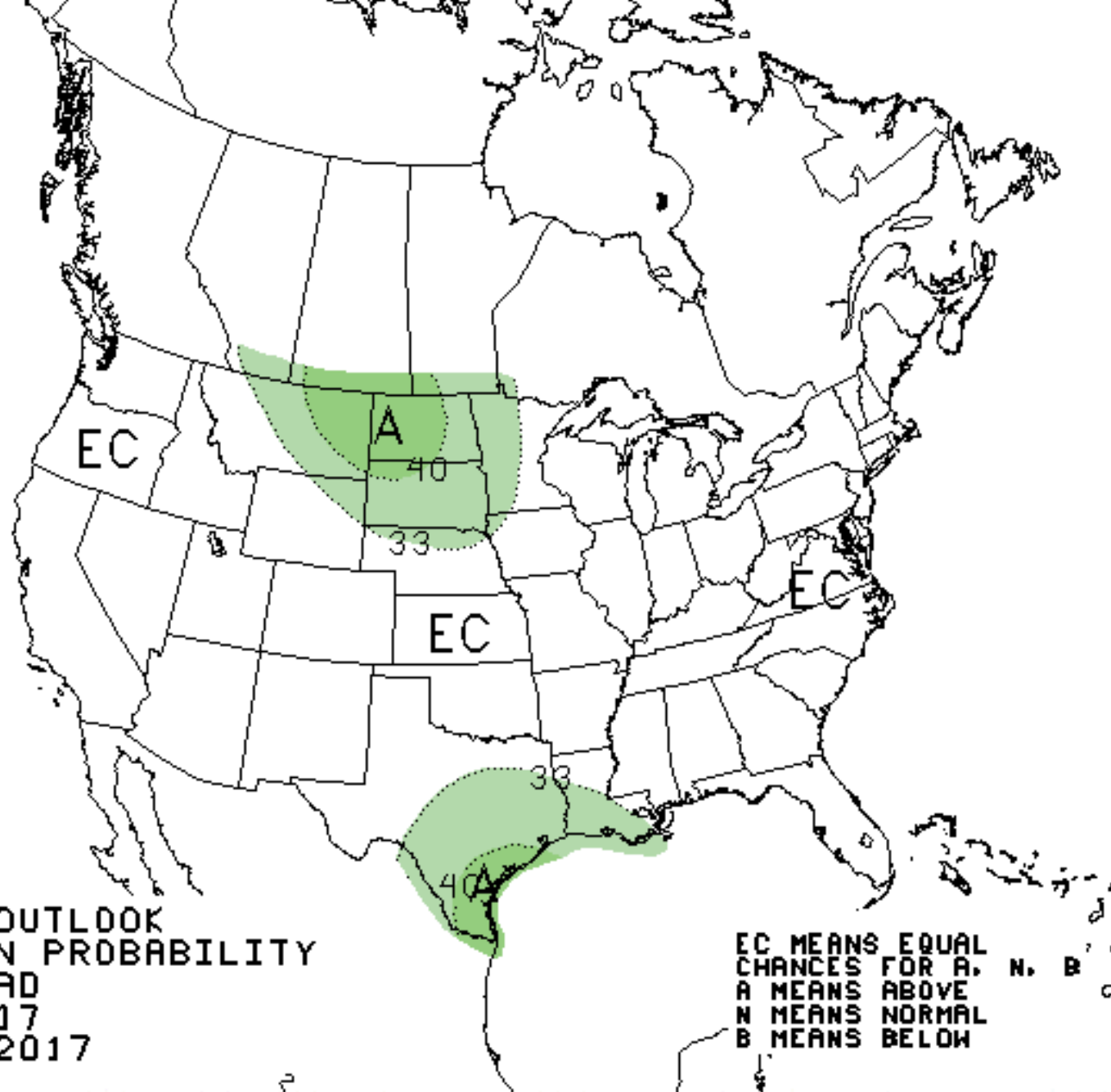


Tripp county, SD.
Stuart family ranch

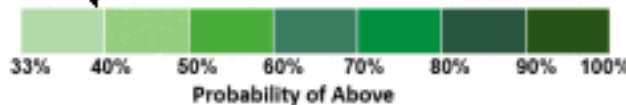
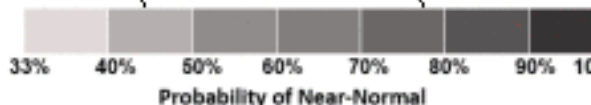
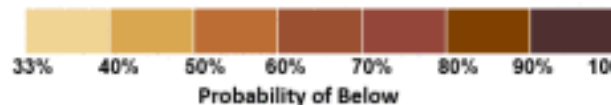




THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID JAS 2017
MADE 15 JUN 2017



EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW



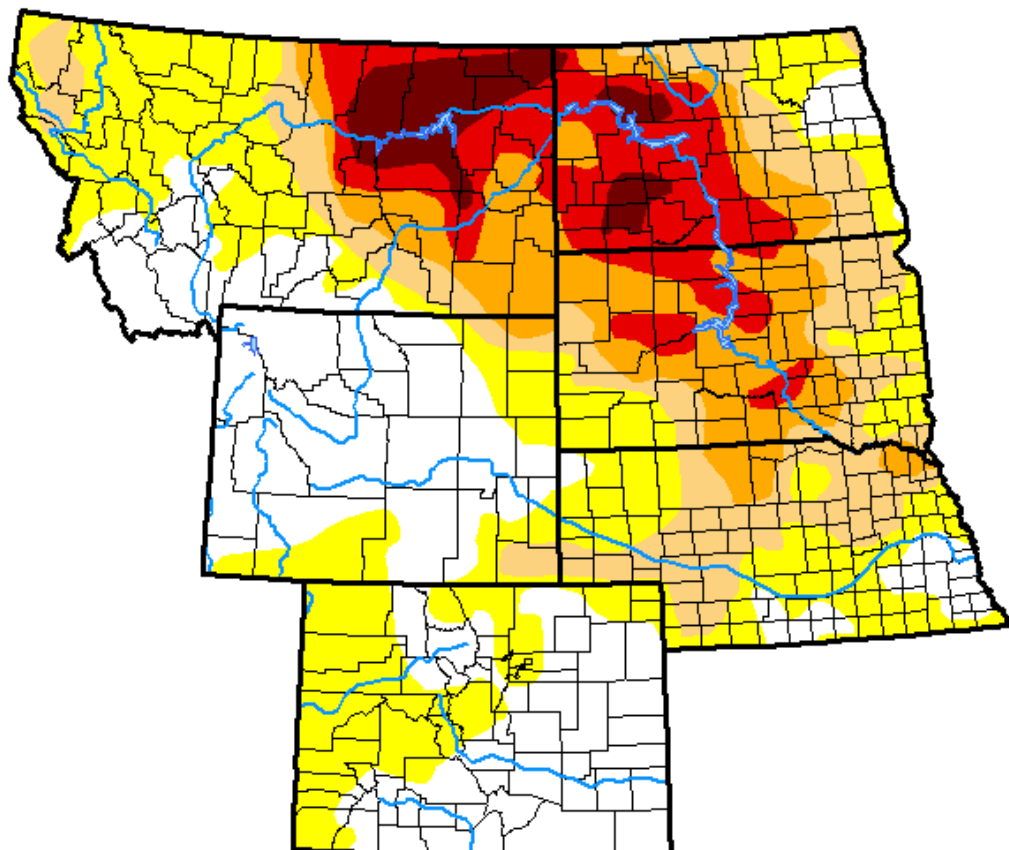
U.S. Drought Monitor

USDA Northern Plains Climate Hub

July 25, 2017

(Released Thursday, Jul. 27, 2017)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	30.93	69.07	39.51	25.57	13.74	3.98
Last Week 07-18-2017	37.80	62.20	35.66	24.28	12.10	1.18
3 Months Ago 04-25-2017	80.66	19.34	3.41	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	61.47	38.53	15.95	1.47	0.00	0.00
Start of Water Year 09-27-2016	62.66	37.34	14.21	3.88	0.23	0.00
One Year Ago 07-26-2016	59.42	40.58	15.54	3.95	1.70	0.00

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Richard Heim
NCEI/NOAA

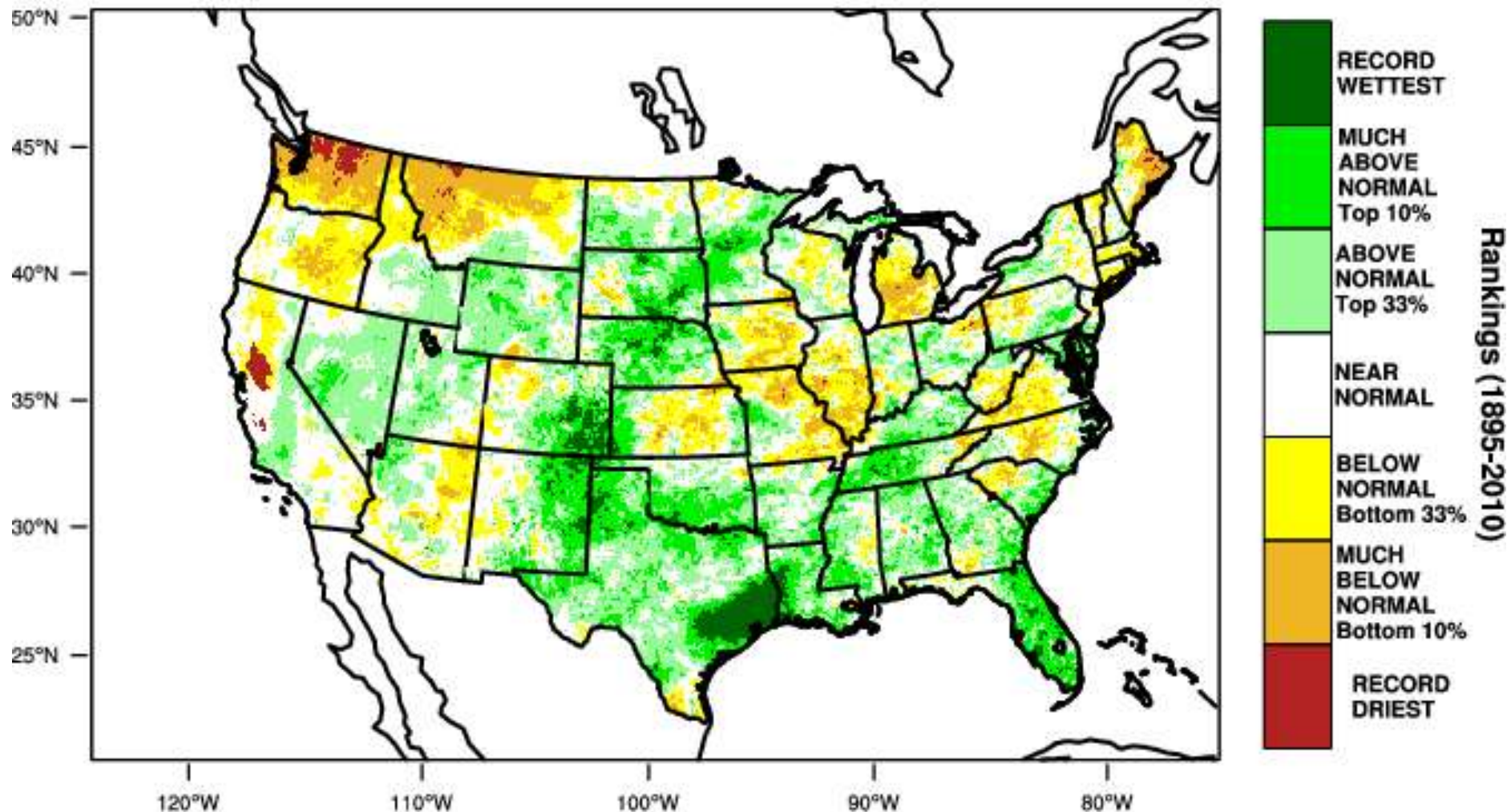


<http://droughtmonitor.unl.edu/>

The rains came! (sort of)

Continental United States - Precipitation

July-September 2017 Percentile

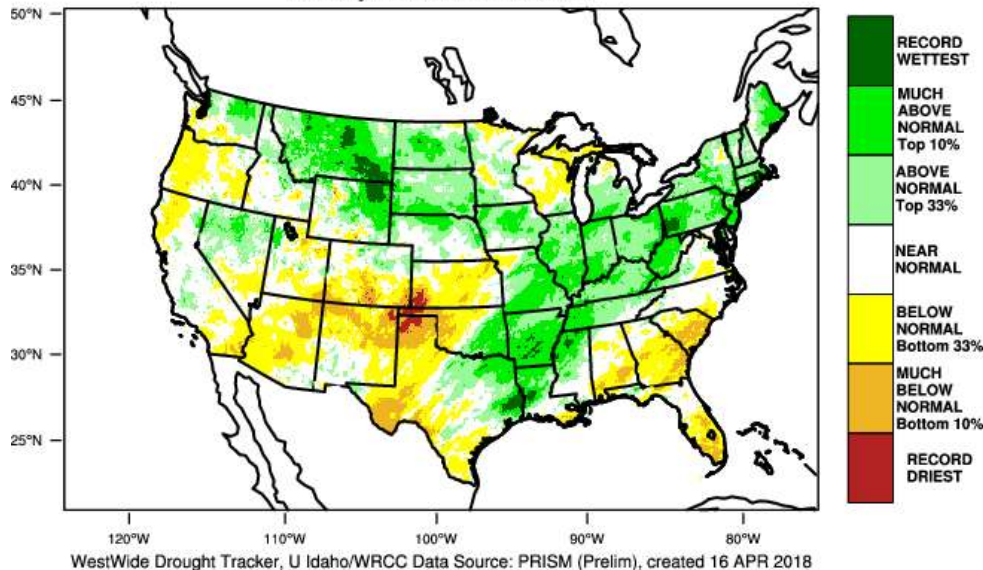


WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 16 OCT 2017

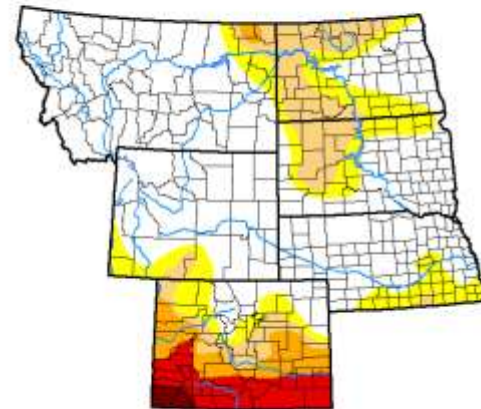
Stay tuned!

Drought is still ongoing

Continental United States - Precipitation
January-March 2018 Percentile



U.S. Drought Monitor
USDA Northern Plains
Climate Hub



April 24, 2018

(Released Thursday, Apr. 26, 2018)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	84.48	36.54	21.24	18.02	5.80	0.78
Last Week (04-17-2018)	84.40	35.90	21.43	18.02	4.40	0.78
3 Months Ago (11-23-2016)	31.44	68.56	30.50	11.70	0.00	0.00
Start of Calendar Year (01-01-2018)	39.26	70.74	31.98	11.23	1.90	0.00
Start of Water Year (09-01-2017)	42.99	67.11	30.34	15.07	12.12	4.54
One Year Ago (04-25-2017)	80.00	19.34	5.41	8.80	8.00	0.00

Intensity:

D0 Abnormally Dry D3 Extreme Drought
D1 Moderate Drought D4 Exceptional Drought
D2 Severe Drought

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Author:

Brad Rippey
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

- Focus on continuing communication and collaboration among states
- Encourage reporting of impacts through UNL's Drought Impact Reporter, CoCoRaHS

Thanks!





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